```
Please note, began holding a session with Dialog on 2/27/2008 7:33:34 PM
 Logon
*** It is now 3/12/2008 4:26:50 PM ***
```

Welcome to DialogLink - Version 5
Revolutionize the Way You Work!

New on Dialog

Order Patent and Trademark File Histories Through Dialog

Thomson File Histories are now available directly through *Dialog*. Combined with the comprehensive patent and trademark information on *Dialog*, file histories give you the most complete view of a patent or trademark and its history in one place. When searching in the following patent and trademark databases, a link to an online order form is displayed in your search results, saving you time in obtaining the file histories you need.

Thomson File Histories are available from the following *Dialog* databases:

- CLAIMS/Current Patent Legal Status (File 123)
- CLAIMS/U.S. Patents (File 340)
- Chinese Patent Abstracts in English (File 344)
- Derwent Patents Citation Index (File 342)
- Derwent World Patents Index (for users in Japan) (File 352)
- Derwent World Patents Index First View (File 331)
- Derwent World Patents Index (File 351)
- Derwent World Patents Index (File 350)
- Ei EnCompassPat (File 353)
- European Patents Fulltext (File 348)
- French Patents (File 371)
- German Patents Fulltext (File 324)
- IMS Patent Focus (File 447, 947)
- INPADOC/Family and Legal Status (File 345)
- JAPIO - Patent Abstracts of Japan (File 347)
- LitAlert (File 670)
- U.S. Patents Fulltext (1971-1975) (File 652)
- U.S. Patents Fulltext (1976-present) (File 654)
- WIPO/PCT Patents Fulltext (File 349)

- TRADEMARKSCAN - U.S. Federal (File 226)

DialogLink 5 Release Notes
New features available in the latest release of DialogLink 5 (August 2006)

- Ability to resize images for easier incorporation into DialogLink Reports
- New settings allow users to be prompted to save Dialog search sessions in the format of their choice (Microsoft Word, RTF, PDF, HTML, or TEXT)
- Ability to set up Dialog Alerts by Chemical Structures and the addition of Index Chemicus as a structure searchable database
- Support for connections to STN Germany and STN Japan services

Show Preferences for details

```
? Help Off Line
* * *
Connecting to  - Dialog - 291942
Connected to Dialog via SMS003002768

?  b 15,9,623,810,275,624
```

[File 15] ABI/Inform(R) 1971-2008/Mar 12
(c) 2008 ProQuest Info&Learning. All rights reserved.

[File 9] Business & Industry(R) Jul/1994-2008/Mar 10
(c) 2008 The Gale Group. All rights reserved.

[File 623] Business Week 1985-2008/Mar 11
(c) 2008 The McGraw-Hill Companies Inc. All rights reserved.

[File 810] Business Wire 1986-1999/Feb 28
(c) 1999 Business Wire . All rights reserved.

[File 275] Gale Group Computer DB(TM) 1983-2008/Mar 05
(c) 2008 The Gale Group. All rights reserved.

[File 624] McGraw-Hill Publications 1985-2008/Mar 12
(c) 2008 McGraw-Hill Co. Inc. All rights reserved.
File 624: Homeland Security & Defense and 9 Platt energy journals added Please see HELP NEWS624 for more

```
?
?  s generate(s)library(s)object
```

```
        326516   GENERATE
        159222   LIBRARY
        148727   OBJECT
S1         141   S GENERATE(S)LIBRARY(S)OBJECT

?  s s1(s)data
           141   S1
       2391430   DATA
S2          40   S S1(S)DATA

?  s 2 (s) cardinal
       3545637   2
         10553   CARDINAL
S3        1351   S 2 (S) CARDINAL

?  s s2(s)cardinal
            40   S2
         10553   CARDINAL
S4           0   S S2(S)CARDINAL

?  t s2/free/1-40
```

2/8/1 (Item 1 from file: 15) <u>Links</u>

02732475   536176591
            USE FORMAT 7 OR 9 FOR FULL TEXT
An Architecture for Behavior-Based Library Recommender Systems
  Word Count: 6262
Dec 2003
Geographic Names: Germany

Descriptors: Library science; Bibliographic data bases; Data collection; Stochastic models; Library cataloging; Academic libraries
Classification Codes: 9175 (CN=Western Europe); 5240 (CN=Software & systems); 8306 (CN=Schools & educational services)
Print Media ID: 17511

2/8/2 (Item 2 from file: 15) Links
ABI/Inform(R)

01362411   00-13398
          USE FORMAT 7 OR 9 FOR FULL TEXT
Visual C plus plus 4.2 Enterprise Edition
  Word Count: 180 Length: 1 Pages
Jan 27, 1997
Company Names:
Microsoft Corp (Duns: 08-146-6849 Ticker: MSFT)
Geographic Names: US

Descriptors: Software reviews; Computer upgrading; C language; Computer programming; SQL
Classification Codes: 9190 (CN=United States); 9000 (CN=Short Article); 5240 (CN=Software & systems); 9120 (CN=Product specific)

2/8/3 (Item 3 from file: 15) Links
ABI/Inform(R)

01276853   99-26249
            USE FORMAT 7 OR 9 FOR FULL TEXT
Visual C plus plus adds SQL, boosts client/server appeal
  Word Count: 416 Length: 1 Pages
Aug 19, 1996
Company Names:
Microsoft Corp (Duns: 08-146-6849 Ticker: MSFT)
Geographic Names: US

Descriptors: Object oriented programming; C language; Product testing; Software reviews; Computer upgrading
Classification Codes: 9190 (CN=United States); 5240 (CN=Software & systems); 7500 (CN=Product planning & development)

2/8/4 (Item 4 from file: 15) Links
ABI/Inform(R)
00559905   91-34262
Defining and Implementing Fortran Generic Abstract Data Types
 Length: 11 Pages
May 1991

Descriptors: FORTRAN ; Data base management systems; Implementations; Computer
programming
Classification Codes: 9130 (CN=Experimental/Theoretical); 5240 (CN=Software &
systems)

2/8/5 (Item 1 from file: 9) Links
Business & Industry(R)
01543435 Supplier Number: 24259326
ORIGINALSIM READIES NT SIMULATION TOOLS

May 13, 1998
Word Count: 465
Industry Names: Applications software; Software
Product Names: Manufacturing, engineering or design software packages (737272)
Concept Terms: All company; All market information; All product and service information; Company forecasts; Financial data; Product development; Sales
Geographic Names: Canada (CDA); Canada (CDAX); North America (NOAX)

2/8/6 (Item 2 from file: 9) <u>Links</u>
Business & Industry(R)
00570203 Supplier Number: 23076358 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Software Gives Object Apps Access to DBMSs

November 14, 1994
Word Count: 455
Company Names: ONTOS INC
Industry Names: Applications software; Software
Product Names: Database software packages (737265)
Concept Terms: All product and service information; Product introduction
Geographic Names: North America (NOAX); United States (USA)

2/8/7 (Item 3 from file: 9) Links
Business & Industry(R)

00564919 Supplier Number: 23075723 (USE FORMAT 7 OR 9 FOR FULLTEXT)
One Face For Interface Tools: Lines Are Blurring Between Formerly Distinct Interface-Builder Categories

November 14, 1994
Word Count: 2139

Special Features: Table
Company Names: INTEGRATED COMPUTER SOLUTIONS; SUNSOFT INC (SUN MICROSYSTEMS INC); VISUAL EDGE SOFTWARE LTD
Industry Names: Software
Product Names: Operating systems software packages (737221)
Concept Terms: All company; All intellectual property; All market information; All product and service information; Distribution license; Foreign business; Market share; Market size; Product development; Trends
Geographic Names: Canada (CDA); Canada (CDAX); North America (NOAX); United States (USA)

2/8/8 (Item 1 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
02505645   Supplier Number: 74991729 (Use Format 7 Or 9 For FULL TEXT)
A Better Connection.(Ontos ObjectSpark 4.1.1)(Product Information)

May 7 , 2001
Word Count: 1257   Line Count: 00110
Company Names: Ontos Inc.--Products
Descriptors: Object-oriented programming; DBMS; Product description/specification
Product/Industry Names: 7372421 (DBMS)
SIC Codes: 7372 Prepackaged software
NAICS Codes: 51121 Software Publishers
Trade Names: Ontos ObjectSpark 4.1.1 (DBMS)--Usage; Ontos ObjectSpark 4.5 Beta
(DBMS)-- Product introduction
File Segment: CD File 275

2/8/9 (Item 2 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
02338834   Supplier Number: 56029112 (Use Format 7 Or 9 For FULL TEXT)
Application Development Made Easier Through Patterns.(Sterling Software's
COOL:Plex development software)(Software Review)(Evaluation)

Sept 30 , 1999
Word Count: 3790   Line Count: 00290
Company Names: Sterling Software Inc.--Products
Geographic Codes/Names: 1USA United States
Descriptors: CASE software; Software single product review
Event Codes/Names: 350 Product standards, safety, & recalls
Product/Industry Names: 7372511 (CASE Software)
NAICS Codes: 51121 Software Publishers
Trade Names: COOL:Plex (CASE software)--Evaluation
File Segment: CD File 275

2/8/10 (Item 3 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
02243776   Supplier Number: 53238446 (Use Format 7 Or 9 For FULL TEXT)
ORACLE PLANS NEW MEANING FOR ONE MEANING.

Nov 18 , 1998
Word Count: 1293   Line Count: 00104
Company Names: One Meaning Inc.; Oracle Corp.; Software One Ltd.
Geographic Codes/Names: 1USA United States
Product/Industry Names: 7372000 (Computer Software); 7372425 (Data Warehousing Software)
SIC Codes: 7372 Prepackaged software
Ticker Symbols: ORCL
File Segment: CD File 275

2/8/11 (Item 4 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)

02175131   Supplier Number: 20593808 (Use Format 7 Or 9 For FULL TEXT)
ORIGINALSIM READIES NT SIMULATION TOOLS.

May 13 , 1998
Word Count: 514   Line Count: 00045
File Segment: CD File 275

2/8/12 (Item 5 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
02049510   Supplier Number: 19246403 (Use Format 7 Or 9 For FULL TEXT)
Rogue Wave makes code generator customizable. (Object Factory 4.0)(Brief Article)
(Product Announcement)

March 24 , 1997
Word Count: 141   Line Count: 00015

Special Features: illustration; other
Company Names: Rogue Wave Software Inc.--Product introduction
Descriptors: Application Development Software; Software Product Introduction
Product/Industry Names: 7372510 (Software Development Tools)
SIC Codes: 7372 Prepackaged software
Trade Names: Object Factory 2.0 (Application development software)--Product introduction
File Segment: CD File 275

2/8/13 (Item 6 from file: 275) Links
Gale Group Computer DB(TM)
01933827   Supplier Number: 18252925 (Use Format 7 Or 9 For FULL TEXT)
Roll your own persistence implementations to go beyond the MFC frontier. (developing a persistence implementation that is not integrated with MFC, but that can coexist with MFC) (Technology Tutorial)(Tutorial)

June , 1996
Word Count: 7336   Line Count: 00593

Special Features: illustration; chart; program
Descriptors: Programming Tutorial; Object-Oriented Programming
SIC Codes: 7372 Prepackaged software
File Segment: CD File 275

2/8/14 (Item 7 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01907005   Supplier Number: 18043501 (Use Format 7 Or 9 For FULL TEXT)
ROGUE WAVE LAUNCHES VISUAL APPLICATION BUILDER, CODE
GENERATOR FOR JAVA, SEEKS RELATIONSHIP WITH SUN.

March 1 , 1996
Word Count: 519   Line Count: 00043
File Segment: CD File 275

2/8/15 (Item 8 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01777295   Supplier Number: 16897274 (Use Format 7 Or 9 For FULL TEXT)
DB tool developers eye objects; also target multiple platforms for latest product upgrades. (JYACC Inc's JAM for Macintosh and OS/2, Menai Corp's Gamelon 2.0 and TopSpeed Corp's Clarion 1.5)(Product Announcement)

May 1 , 1995
Word Count: 401   Line Count: 00034
Company Names: JYACC Inc.--Product introduction; Menai Corp.--Product introduction; TopSpeed Corp.--Product introduction
Descriptors: DBMS; Programming Utility; Software Product Introduction
Product/Industry Names: 7372510 Computer Language Software ex Military; 7372203 Database Mgmt Software Pkgs
SIC Codes: 7372 Prepackaged software
Trade Names: JAM for Macintosh (DBMS)--Product introduction; JAM for OS/2 (DBMS)-- Product introduction; Gamelon for Windows (Programming utility)--Product introduction; Gamelon for Windows NT (Programming utility)--Product introduction; Gamelon for OS/2 (Programming utility)--Product introduction; Clarion for Windows 1.5 (DBMS)--Product introduction
Operating Platform: Microsoft Windows; Microsoft Windows NT; OS/2; UNIX
File Segment: CD File 275

2/8/16 (Item 9 from file: 275) Links

01761233   Supplier Number: 16736552 (Use Format 7 Or 9 For FULL TEXT)
INFORMIX TO TAKE THE OBJECT PATH FOR ITS NEW REPOSITORY WITH
VERSANT's OBJECT DATABASE.

March 21 , 1995
Word Count: 229   Line Count: 00018
File Segment: CD File 275

2/8/17 (Item 10 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)

01710734   Supplier Number: 16246103 (Use Format 7 Or 9 For FULL TEXT)
MacDraft 4 links drawings to Excel, adds database; revamped interface groups new
and old tools in palettes. (Software Review) (Evaluation)

Nov 14 , 1994
Word Count: 1381   Line Count: 00107

Special Features: illustration; table
Company Names: Innovative Data Design Inc.--Products
Descriptors: Evaluation; CAD Software
Product/Industry Names: 7372440 (Graphics Software Pkgs (Micro))
SIC Codes: 7372 Prepackaged software
Trade Names: MacDraft 4.0 (CAD software)--Evaluation
File Segment: CD File 275

2/8/18 (Item 11 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01702118   Supplier Number: 16236372 (Use Format 7 Or 9 For FULL TEXT)
Eiffel for Windows ships for $49.95. (Interactive Software Engineering's Personal Eiffel
for Windows 3.1 application development software) (Brief Article) (Product
Announcement)

Sept , 1994
Word Count: 132   Line Count: 00011
Company Names: Interactive Software Engineering Inc.--Product introduction
Descriptors: Product Introduction; Application Development Software
SIC Codes: 7372 Prepackaged software
Trade Names: Personal Eiffel for Windows (Application development software)--Product
introduction; Microsoft Windows 3.1 (GUI)--Computer programs
Operating Platform: Microsoft Windows
File Segment: CD file 275

2/8/19 (Item 12 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)

01697446   Supplier Number: 16213528 (Use Format 7 Or 9 For FULL TEXT)
Hewlett-Packard announcements.

August 9 , 1994
Word Count: 994   Line Count: 00085
File Segment: CD File 275

2/8/20 (Item 13 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01688439   Supplier Number: 15519137 (Use Format 7 Or 9 For FULL TEXT)
Decision support for data warehouses. (Information Advantage's IA Decision Support Suite) (Brief Article) (Product Announcement)

July , 1994
Word Count: 283   Line Count: 00025
Company Names: Information Advantage Inc.--Product introduction
Descriptors: Product Introduction; Decision Support Software; Integrated Software
SIC Codes: 7372 Prepackaged software
Trade Names: IA Decision Support Suite (Decision support software)--Product introduction
File Segment: CD File 275

2/8/21 (Item 14 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01684101   Supplier Number: 15380532 (Use Format 7 Or 9 For FULL TEXT)
An objective view of ObjectView 3.0. (KnowledgeWare Inc's DBMS applications
software) (Application Strategies) (Column) (Software Review) (Evaluation)

June , 1994
Word Count: 2681   Line Count: 00228
Company Names: KnowledgeWare Inc.--Products
Descriptors: DBMS; Application Development Software; Evaluation
SIC Codes: 7372 Prepackaged software
Ticker Symbols: KNOW
Trade Names: ObjectView 3.0 (Application development software)--evaluation
Operating Platform: Microsoft Windows
File Segment: CD File 275

2/8/22 (Item 15 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01613921   Supplier Number: 13901763 (Use Format 7 Or 9 For FULL TEXT)
Tools and utilities. (software packages that help database developers prototype and design applications, query, and create help systems, among other uses) (1993 Database Buyer's Guide Special Issue) (Buyers Guide)

June 15 , 1993
Word Count: 45702   Line Count: 03876
Descriptors: DBMS; Applications Programming; Application Development Software; Directories; Computer Software Industry; Disk/Tape File Utilities; Program Testing Software; Documentation; Screen Generators/Formatters; Computer-Aided Software Engineering; File Format Conversion Software; File Transfer; Desktop Utility; Program Editor; Disk/File Management Software; Online Help File; Program Library; Query Processing; Report Generation Software
SIC Codes: 7372 Prepackaged software
File Segment: CD File 275

2/8/23 (Item 16 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)

01591624   Supplier Number: 13667503 (Use Format 7 Or 9 For FULL TEXT)
The road to objects: object orientation represents a fundamental change in thinking, and a lot of hard work. (On the Front End) (Column)

April , 1993

2/8/24 (Item 17 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01591376   Supplier Number: 13665535 (Use Format 7 Or 9 For FULL TEXT)
HyperDesk bolsters object-management tool set. (HyperDesk Corp. to ship upgrade to
HyperDesk Distributed Object Management System) (HD DOMS 1.1) (Product
Announcement)

March 29 , 1993
Word Count: 337   Line Count: 00027

Special Features: illustration; chart
Company Names: HyperDesk Corp.--Product introduction
Descriptors: Product Introduction; Application Development Software
SIC Codes: 7372 Prepackaged software
Trade Names: HyperDesk Distributed Object Management System 1.1 (Program
development software)--Product introduction
Operating Platform: MS Windows; UNIX
File Segment: CD File 275

2/8/25 (Item 18 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01519920   Supplier Number: 12211940 (Use Format 7 Or 9 For FULL TEXT)
What Xbase code generator should you use? (includes related templates directory)

April , 1992
Word Count: 4830   Line Count: 00464
Descriptors: Code Generator; Guidelines; DBMS; Software Packages; Applications
Programming; Program Development Techniques; Application Development Software
SIC Codes: 7372 Prepackaged software
Trade Names: Genifer (Database application development software)--Design and
construction; Rad (Program development software)--Design and construction; SoftCode
(Database application development software)--Design and construction
File Segment: CD File 275

2/8/26 (Item 19 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01477461   Supplier Number: 11762072
Programming under System 7.0. (Macinations) (Column)

Jan , 1992

Special Features: illustration; table
Company Names: Symantec Corp.--Products; TGS Systems--Products
Descriptors: Programming; Low Cost; Application Development Software; Operating System
SIC Codes: 7372 Prepackaged software
Trade Names: Apple Macintosh (680X0-based system)--Computer programs; System 7.0 (Operating system)--Computer programs; Think Pascal 4.0 (Program development software)--Usage; Prograph 2.5 (Program development software)-- Usage
Operating Platform: Apple Macintosh
File Segment: CD File 275

2/8/27 (Item 20 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01446986   Supplier Number: 11205151 (Use Format 7 Or 9 For FULL TEXT)
Inherit the window. (Software Review) (Turbo Vision for C++ v. 1.0 from Borland
International and POET database from BKS Software GmbH) (evaluation)

Sept , 1991
Word Count: 1009   Line Count: 00080

Special Features: illustration; table
Company Names: Borland International Inc.--Products; BKS Software GmbH--Products
Descriptors: Evaluation; Program Library; Program Generators; Application Development
Software; Applications Programming Interface; Object-Oriented Programming; Database
SIC Codes: 7372 Prepackaged software
Ticker Symbols: BORLN
Trade Names: Turbo Vision for C++ (Program development software)--evaluation; POET
(Data base)--evaluation
Operating Platform: MS-DOS; MS Windows; NeXT
File Segment: CD File 275

2/8/28 (Item 21 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01446929   Supplier Number: 11047844 (Use Format 7 Or 9 For FULL TEXT)
Reuse implies Eiffel. (Applied Logic Research's Eiffel, an object-oriented programming language) (technical)

June , 1991
Word Count: 2984   Line Count: 00220

Special Features: illustration; program
Company Names: Applied Logic Systems Inc.--Products
Descriptors: Object-Oriented Languages; Program Development Techniques; Software
Design; Object-Oriented Programming
SIC Codes: 7372 Prepackaged software
Trade Names: Eiffel (Application development software)--Design and construction
File Segment: CD File 275

2/8/29 (Item 22 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01446928   Supplier Number: 11046824 (Use Format 7 Or 9 For FULL TEXT)
An old friend in new clothes. (Microsoft Corp's Visual Basic program development software) (Software Review) (evaluation)

June , 1991
Word Count: 2557   Line Count: 00184
Company Names: Microsoft Corp.--Products
Descriptors: Evaluation; Application Development Software
SIC Codes: 7372 Prepackaged software
Ticker Symbols: MSFT
Trade Names: Microsoft Windows 3.0 (GUI)--evaluation; Microsoft Visual Basic (Application development software)--evaluation
Operating Platform: MS Windows
File Segment: CD File 275

2/8/30 (Item 23 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01445383   Supplier Number: 11134535 (Use Format 7 Or 9 For FULL TEXT)
Mozart GUI for Windows. (graphical user interface) (Mozart Systems Corp.'s Mozart 3.0) (product announcement)

August , 1991
Word Count: 202   Line Count: 00016
Company Names: Mozart Systems Corp.--Product introduction
Descriptors: Application Development Software; GUI; Product Introduction
SIC Codes: 7372 Prepackaged software
Trade Names: Mozart 3.0 (Program development software)--Product introduction
File Segment: CD File 275

2/8/31 (Item 24 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01431974   Supplier Number: 10771643 (Use Format 7 Or 9 For FULL TEXT)
Interleaf explains its active document technology as it brings in Interleaf release 5.

May 21 , 1991
Word Count: 895   Line Count: 00073
Company Names: Interleaf Inc.--Products
Descriptors: DTP Software; Information Resources Management; Upgrading; Hypertext;
Text Processing Software
SIC Codes: 7372 Prepackaged software
Ticker Symbols: LEAF
Trade Names: Interleaf 5.0 (DTP software)--Design and construction
Operating Platform: TCP/IP
File Segment: CD File 275

2/8/32 (Item 25 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01429239   Supplier Number: 10701974 (Use Format 7 Or 9 For FULL TEXT)
Enterprise-wide software engineering "can mean Unix rather than AD/Cycle."

May 13 , 1991
Word Count: 987   Line Count: 00083
Company Names: Interactive Development Environments Inc.--Product development
Descriptors: UNIX; Product Development; Application Development Software; Computer-Aided Software Engineering
SIC Codes: 7371 Computer programming services; 7372 Prepackaged software
Operating Platform: UNIX
File Segment: CD File 275

2/8/33 (Item 26 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01422124   Supplier Number: 10452217 (Use Format 7 Or 9 For FULL TEXT)
A tour of the Lotus add-in toolkit. (Software Review) (Lotus Development Corp. Add-In-Toolkit for 1-2-3 Release 3.0; Add-In Toolkit for 1-2-3 Release 3.1) (evaluation)

April 16 , 1991
Word Count: 641   Line Count: 00045
Company Names: Lotus Development Corp.--Products
Descriptors: Add-In/On Software; Application Development Software; Spreadsheet Software; Evaluation
SIC Codes: 7372 Prepackaged software
Ticker Symbols: LOTS
Trade Names: Add-In Toolkit for Lotus 1-2-3 3.0 (Program development software)--evaluation; Add-In Toolkit for Lotus 1-2-3 3.1 (Program development software)--evaluation
File Segment: CD File 275

2/8/34 (Item 27 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01420574   Supplier Number: 10425992 (Use Format 7 Or 9 For FULL TEXT)
Forum dress rehearsal: behind the scenes.(includes a related article on the format
followed by the Forum, and a related article on the purpose of office automation)
(director's script for the 1991 platforms for Computing Forum)

Feb 25 , 1991
Word Count: 14754   Line Count: 01160

Special Features: illustration; table
Descriptors: Office Automation; Work Group Computing; Analysis; Networks; Information
Resources Management; Conferences and Meetings; Notebook Computer
File Segment: CD File 275

2/8/35 (Item 28 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01387527   Supplier Number: 09715079 (Use Format 7 Or 9 For FULL TEXT)
Constructing a compact disk library with ToolBook. (Asymetrix Corp.'s program
development software) (Power Programming) (Column) (tutorial)

Dec 25 , 1990
Word Count: 1619   Line Count: 00125
Descriptors: Object-Oriented Programming; Tutorial; Database Design; Compact Disk;
Software packages
SIC Codes: 7372 Prepackaged software
Trade Names: ToolBook (Application development software)--Usage
Operating Platform: MS Windows
File Segment: CD File 275

2/8/36 (Item 29 from file: 275) Links
Gale Group Computer DB(TM)
01362226   Supplier Number: 08168088 (Use Format 7 Or 9 For FULL TEXT)
FoxPro: dBASE without tears. (Fox Software's FoxPro dBASE clone) (Software Review) (evaluation)

Feb , 1990
Word Count: 3731   Line Count: 00274
Company Names: Fox Software Inc.--Products
Descriptors: Data Base Languages; Compiler; Compatible Software; Evaluation; DBMS
SIC Codes: 7372 Prepackaged software
Trade Names: Microsoft FoxPro (Database application development software)--evaluation
File Segment: CD File 275

2/8/37 (Item 30 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)

01362052   Supplier Number: 08595744 (Use Format 7 Or 9 For FULL TEXT)
IBM Announcements. (Device Support Facilities Release 12 available) (IBM discounts
Computer-Aided Engineering Design System for users of discontinued RT)

June 22 , 1990
Word Count: 1065   Line Count: 00088
Company Names: International Business Machines Corp.--Product enhancement
Descriptors: Enhancements; Computer-Aided Engineering; Price Cutting; Disk/Tape File
Utilities
SIC Codes: 3571 Electronic computers; 7372 Prepackaged software
Ticker Symbols: IBM
Trade Names: Device Support Facilities 12.0 (Data center management software)--Product
enhancement; Computer-Aided Engineering Design System 3.0 (CAE software)-- Prices and
rates
File Segment: CD File 275

2/8/38 (Item 31 from file: 275) Links
Gale Group Computer DB(TM)
01296223   Supplier Number: 07588447 (Use Format 7 Or 9 For FULL TEXT)
Ada tools mature, but users debate language standards. (includes related article on
Ada's standard features) (technical)

May 1 , 1989
Word Count: 3497   Line Count: 00279

Special Features: illustration; chart
Descriptors: ADA; Real-Time System; Distributed Systems; Programming Language;
Standard; Debugging; Compiler; Application Development Software; Upgrading; User
Survey; Technology
SIC Codes: 7372 Prepackaged software
Programming Language: Ada
File Segment: CD File 275

2/8/39 (Item 32 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01285074   Supplier Number: 07262043 (Use Format 7 Or 9 For FULL TEXT)
Tech releases: software development. (product announcement)

Feb , 1989
Word Count: 1498   Line Count: 00127
Descriptors: Product Introduction; Software packages; Emulators; Application Development
Software; UNIX; User Interface; Debugging Tools; OS/2
SIC Codes: 7372 Prepackaged software
File Segment: CD File 275

2/8/40 (Item 33 from file: 275) <u>Links</u>
01252518   Supplier Number: 06833377 (Use Format 7 Or 9 For FULL TEXT)
Article finder. (index) (EDGE Report)

June , 1988
Word Count: 50668   Line Count: 04386
SIC Codes: 3699 Electrical equipment & supplies, not elsewhere classified
File Segment: TI File 148

```
?   s generating(s)object(s)library(s)data
        209709   GENERATING
        148727   OBJECT
        159222   LIBRARY
       2391430   DATA
S5          14   S GENERATING(S)OBJECT(S)LIBRARY(S)DATA

?   t s5/free/1-14
```

5/8/1 (Item 1 from file: 15) Links
ABI/Inform(R)

00647861   92-62801
            USE FORMAT 7 OR 9 FOR FULL TEXT
Windows Forms Processing
  Word Count: 1421 Length: 7 Pages
Nov 2, 1992
Company Names:
Delrina Technology Inc
JetForm Corp
Geographic Names: US

Descriptors: Software reviews; Performance evaluation; Forms management ; Automation;
Applications; Functions; Ratings & rankings
Classification Codes: 5240 (CN=Software & systems); 9120 (CN=Product specific); 9190
(CN=United States)

5/8/2 (Item 1 from file: 9) Links
Business & Industry(R)
04202595 Supplier Number: 161018867 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Modern IDEs bring new meaning to 'integrated&apos.

March 26, 2007
Word Count: 1425
Concept Terms: All market information; All product and service information; Applications; Trends
Geographic Names: North America (NOAX); United States (USA)

5/8/3 (Item 2 from file: 9) <u>Links</u>
Business & Industry(R)
00574163 Supplier Number: 23074419 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Mil DSP tools go commercial

November 07, 1994
Word Count: 303
Company Names: LORAL CORP
Industry Names: Applications software; Software
Product Names: Manufacturing, engineering or design software packages (737272)
Concept Terms: All product and service information; Product introduction
Geographic Names: North America (NOAX); United States (USA)

5/8/4 (Item 1 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
03212739   Supplier Number: 161018867 (Use Format 7 Or 9 For FULL TEXT)
Modern IDEs bring new meaning to 'integrated&apos.(integrated design environment)

March 26 , 2007
Word Count: 1612   Line Count: 00135
Geographic Codes/Names: 1USA United States
Descriptors: Embedded system; System on a chip; Electronic design automation; Integrated circuit fabrication; Market trend/market analysis; Technology application
Event Codes/Names: 010 Forecasts, trends, outlooks
File Segment: CD File 275

5/8/5 (Item 2 from file: 275) Links
Gale Group Computer DB(TM)
02505645   Supplier Number: 74991729 (Use Format 7 Or 9 For FULL TEXT)
A Better Connection.(Ontos ObjectSpark 4.1.1)(Product Information)

May 7 , 2001
Word Count: 1257   Line Count: 00110
Company Names: Ontos Inc.--Products
Descriptors: Object-oriented programming; DBMS; Product description/specification
Product/Industry Names: 7372421 (DBMS)
SIC Codes: 7372 Prepackaged software
NAICS Codes: 51121 Software Publishers
Trade Names: Ontos ObjectSpark 4.1.1 (DBMS)--Usage; Ontos ObjectSpark 4.5 Beta
(DBMS)-- Product introduction
File Segment: CD File 275

5/8/6 (Item 3 from file: 275) Links
Gale Group Computer DB(TM)
02038569   Supplier Number: 19146616 (Use Format 7 Or 9 For FULL TEXT)
HEWLETT-PACKARD AND SANTA CRUZ TOUT NEW LODI APPLICATION
INTERFACES FOR UNIFIED UNIX 98.

Feb 21 , 1997
Word Count: 618   Line Count: 00049
File Segment: CD File 275

5/8/7 (Item 4 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01911793   Supplier Number: 18089301 (Use Format 7 Or 9 For FULL TEXT)
No-sweat database design. (Wall Data's Salsa for the Desktop DBMS) (includes related article on Salsa's etymology) (Software Review)(Evaluation)

March 11 , 1996
Word Count: 1008   Line Count: 00081

Special Features: illustration; chart
Company Names: Wall Data Inc.--Products
Descriptors: DBMS; Software Single Product Review
Product/Industry Names: 7372420 (Database Mgmt Software Pkgs (Micro))
SIC Codes: 7372 Prepackaged software
Ticker Symbols: WALL
Trade Names: Salsa for the Desktop (DBMS)--Evaluation
File Segment: CD File 275

5/8/8 (Item 5 from file: 275) Links
Gale Group Computer DB(TM)
01815791 Supplier Number: 17289900 (Use Format 7 Or 9 For FULL TEXT)
An object-oriented approach to test data generation.(object-oriented methodology testing model)(Technical)

May , 1995
Word Count: 2332 Line Count: 00194

Special Features: illustration; other
Descriptors: Technology Information; Object-Oriented Programming; Technology Overview
File Segment: CD File 275

5/8/9 (Item 6 from file: 275) Links
Gale Group Computer DB(TM)
01710734   Supplier Number: 16246103 (Use Format 7 Or 9 For FULL TEXT)
MacDraft 4 links drawings to Excel, adds database; revamped interface groups new
and old tools in palettes. (Software Review) (Evaluation)

Nov 14 , 1994
Word Count: 1381   Line Count: 00107

Special Features: illustration; table
Company Names: Innovative Data Design Inc.--Products
Descriptors: Evaluation; CAD Software
Product/Industry Names: 7372440 (Graphics Software Pkgs (Micro))
SIC Codes: 7372 Prepackaged software
Trade Names: MacDraft 4.0 (CAD software)--Evaluation
File Segment: CD File 275

5/8/10 (Item 7 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01695241   Supplier Number: 16180022 (Use Format 7 Or 9 For FULL TEXT)
IBM previews data modeling tools for OS/2, Windows.

August 8 , 1994
Word Count: 480   Line Count: 00039
Company Names: International Business Machines Corp.--Product development
Descriptors: Application Development Software; Product Development
Product/Industry Names: 7372510 (Computer Language Software ex Military)
SIC Codes: 7372 Prepackaged software
Ticker Symbols: IBM
Trade Names: OBJ Chart (Application development software)--Product development
Operating Platform: Microsoft Windows; OS/2
File Segment: CD File 275

5/8/11 (Item 8 from file: 275) Links
Gale Group Computer DB(TM)

01613921   Supplier Number: 13901763 (Use Format 7 Or 9 For FULL TEXT)
Tools and utilities. (software packages that help database developers prototype and design applications, query, and create help systems, among other uses) (1993 Database Buyer's Guide Special Issue) (Buyers Guide)

June 15 , 1993
Word Count: 45702   Line Count: 03876
Descriptors: DBMS; Applications Programming; Application Development Software; Directories; Computer Software Industry; Disk/Tape File Utilities; Program Testing Software; Documentation; Screen Generators/Formatters; Computer-Aided Software Engineering; File Format Conversion Software; File Transfer; Desktop Utility; Program Editor; Disk/File Management Software; Online Help File; Program Library; Query Processing; Report Generation Software
SIC Codes: 7372 Prepackaged software
File Segment: CD File 275

5/8/12 (Item 9 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01529483   Supplier Number: 12439374 (Use Format 7 Or 9 For FULL TEXT)
Desktop database strategy. (special advertising supplement from Software Publishing
Corp.; includes related articles on how four companies used the Superbase data base
management system to development applications)

August , 1992
Word Count: 2469   Line Count: 00216

Special Features: illustration; table; chart; graph
Company Names: Software Publishing Corp.--Product development
Descriptors: Search Software; Program Library; Connectivity; SQL; Strategic Planning;
Product Development; Relational Data Base Management Systems
SIC Codes: 7372 Prepackaged software
Ticker Symbols: SPCO
Trade Names: Superbase 4 1.3 (Data base management system)--Product development;
Superbase SQL Library (Add-in/on software)--Product development; InfoAlliance 1.1
(Search software)--Product development
Operating Platform: OS/2; UNIX; MS-DOS; MS Windows
File Segment: CD File 275

5/8/13 (Item 10 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01476008   Supplier Number: 12040426
A small Trellis programming project. (Trellis Object System)(object-oriented programming) (Tutorial)

March-April , 1992

Special Features: illustration; program
Company Names: Digital Equipment Corp.--Products
Descriptors: Object-Oriented Programming; Prototype; Tutorial; Compiler; Application Development Software; Programming Instruction
SIC Codes: 3571 Electronic computers; 7372 Prepackaged software
Ticker Symbols: DEC
Trade Names: DEC Trellis Object System (Program development software)--Usage
File Segment: CD File 275

5/8/14 (Item 11 from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
(c) 2008 The Gale Group. All rights reserved.
01319793   Supplier Number: 08013374 (Use Format 7 Or 9 For FULL TEXT)
Four for two. (Software Review) (Easel development tool for OS/2 Presentation
Manager) (evaluation)

Nov , 1989
Word Count: 1145   Line Count: 00087

Special Features: illustration; program
Company Names: Interactive Images Inc.--Products
Descriptors: Application Development Software; Software Packages; Evaluation
SIC Codes: 7372 Prepackaged software
Trade Names: Easel (Program development software)--evaluation
Operating Platform: OS/2
File Segment: CD File 275

1815791/9 (Direct type from file: 275) <u>Links</u>
Gale Group Computer DB(TM)
01815791   Supplier Number: 17289900 (This Is The FULL TEXT)
An object-oriented approach to test data generation.(object-oriented methodology testing model)(Technical)

Conroy, Art

Abstract: Object-oriented data generation methodology shortens transition time between procedural coding and event programming, enabling development groups to create new and sophisticated applications in shorter time spans. The model, divided into three parts, software engine, specifications and the data-fill types and associated library types, allows for unlimited possibilities in generating data. In addition, features such as modular and open designs allow for component upgrading, modification and unlimited language specification. The design of the model is also application-independent that is, file attributes are set by the user, and portable taking advantage of C. These features grant the module certain advantages such as early design phase testing, performance testing of the module under stress loading, and collection of feedback from the user community.

Text:

Generating test data has always been a problem. There is no easy
way. From
the moment you begin building a new application, a problem lies
in wait --
the application must be populated with live data to see what
really
happens. The more sophisticated the application, the better the
chances are
that testing falls through the cracks. After all, there is the
deadline.
Something has to go. Fixing bugs in production has always worked
in the
past.

Rapid application development is enabling programs to reach the
implementation phase in record time. The pressure is on and the
old ways of
gathering test data just do not measure up in today's
environment.

Traditional methods for creating test data include:
    * Copying production data
    * Extracting production data
    * Manually entering the data from external sources
    * Writing programs to generate data.
    These methods are time-consuming, limited in scope, expensive and not
easily migrated to another application. Which comes first, the chicken or
the egg? If the data does not exist, how do you create a million customer
records out of thin air? If the data does exist, it is often inaccessible
to the programming staff due to a number of reasons.
    * The data is of a confidential nature (medical, legal, defense,
financial and personnel files).
    * The data simply does not exist yet (often the case with new
applications).
    * Production and resource limitations prevent using existing data.
    * The data is classified (the case with government contractors).
    * The application is being migrated but the existing data structures
cannot be migrated,
    Object-Oriented Data Generation
    The lack of any methodology for generating data quickly, easily and
accurately led to the development of an object-oriented data generation
methodology in cooperation with Dr. Marvin Moody, a consultant and adjunct
professor in Computer Science at the University of Colorado (Boulder, CO).
This methodology is based on the concept of treating data values as
descriptive objects. These objects, called data-fill types, describe a
piece of data by its content, not its structure. Rather than limit the user
to things such as INT, LONG, CHAR or DATE, the data-fill object is a last
name, an address, a part number, an account balance, a job title and so on.
This approach led to the development of an object-oriented data generation
engine that generates data values in a matter of minutes.
    Surprisingly, the reaction from experienced programmers first exposed
to the process was, "You can't do that!" or, "How can you create data out
of thin air; it's impossible." On the other hand, first-year computer

science students embraced the concept immediately. Creating realistic test
data for any application has always been a problem. Now, a programmer can
build a business application and fill it with several million records in
less time. Simulating an actual production environment is easier. Terms
such as throughput, response time and bottleneck become actual events. By
thinking about data values as a descriptive type rather than a data type,
generating test data can actually be fun.

The Model

The model for object-oriented data generation methodology has three
parts. The core is the software engine, which contains the programmatic
logic and algorithms. The engine processes a specification, a description
of the output file that describes the record and field structures. There
are also the data-fill types and their associated library of values created
to make it easy for users to select and describe an output value. Rather
than think about data as data-types in the traditional sense, data is
described by its properties and characteristics. Examples of data-fill
types include:

* NAMEL - last names
* CITUS - U.S. cities
* PHONE - a 10-digit phone number
* DAYMD - an eight-digit date displayed as YY/MM/DD
* STATA - State abbreviations
* GENDR - male/female gender designations
* STAMP - DB2 timestamp
* DUNIX - UNIX-formatted system date and time
* RANDA - Random alphabetic characters
* INTER - Positive and negative integers.

The library contains dozens of data-fill types and includes the
capability for users to define custom data-fill types through user-defined
values. This makes the possibilities for generating data unlimited. Users
have the flexibility to generate just what they need and no more. This
approach has important implications for every phase in the development
cycle. In the analysis and design phases, questions about data values can
be tested up front. In the coding phase, data can be quickly generated to

test specific functions and modules. During unit testing, performance
issues can be tested and decisions can be made about the capabilities and
limitations of the hardware environment. In the testing and debugging
phase, production databases can be created from scratch and full
simulations can be run prior to migration to production.

In the specification itself, users can define such things as:
* The output file name
* The number of records to be generated
* The record structure (variable or fixed)
* The record and field delimiters.

For each field in the specification, users can describe how the values
are to be generated, including:
* Position
* Column/field name
* Data type
* Data-fill type
* Sequence (random or sequential)
* Bounds (lower and upper)
* Interval (numeric interval between generations)
* Repeat value (how many times does the value repeat itself?)
* Frequency distribution
* Decimal places
* Interfield dependencies
* Seed values (values for predicting random generation patterns).

Armed with these property settings, many of the most complicated data
generation sequences can be completed in a few minutes. Integrated into the
application development process, anyone can generate data at any stage,
incorporating testing at the earliest stages of the development cycle.
Because the data is generated from a specification, the only thing that
needs to be saved is the specification, not the data. Once the test data
has been used, it can be deleted. The seed values in the specification
ensure the same random sequences can be re-created.

Another important characteristic of the model is the fact that the
generation output is a data value, not a data type. This allows the engine
to take advantage of the hardware architecture and output data in EBCDIC or
ASCII format. A single engine can provide data for any application. The
application import and load functions handle the internal data

structures.
The generated data has objective application, since all languages have a
method for creating sequential data import processes. These characteristics
of the model make this methodology objective in its implementation. Whether
the target application is DB2, IMS, Oracle, Access, COBOL or any other
program, there is a method for loading data into the application.
    There are other features of the model that make it easy to modify for
different environments.
    * The design is modular. The generation engine is separate from the
data-fill types, the specification and the data tables. The components can
be upgraded and modified for any country and language.
    * The design is open. The specification can be created in any
language, providing an Application Programming Interface (API) to any
application or programming language.
    * The design is application-independent. The output is either in
EBCDIC or ASCII, enabling most applications to load or import the data.
File attributes and delimiters are set by the user. Files can contain
multiple record formats.
    * The design is portable. It takes advantage of the strengths and
popularity of C. The engine can be implemented on any system that has a C
compiler. The specifications can be created on any client no matter what
the operating system or hardware and then be transferred to the server or
host for generation.
    The Need For Change
    Data generation is not a new problem. In fact, beginning with computer
programming classes, the lack of realistic data has always been the
Achilles' heel of programming. How often do you "ditty up" a data file with
a dozen or so records to pass through the application? Do you remember the
temps brought in for a week to copy data from source documents? Most of the
problems associated with the traditional methods of creating test data are
a thing of the past with object-oriented data generation methodology.
    There are other changes also driving the need for a new data

generation paradigm. With the rapid transition from procedural coding to
event-driven programming, development groups can create new and sophisticated applications in a fraction of the time it used to take. Along
with this rapid development comes the need for a better way to generate
realistic test and production data.

Why? Because data can pass through and be manipulated by many more
subsystems than before. A piece of data can now pass from a GUI interface,
through programmatic logic, out to a data server, on to a communications
link and network, up to the mainframe, into a data warehouse and back.
Questions about application performance and data integrity take on new
importance. How much data needs to go? How fast will it be transmitted?
What is the throughput? What about sort times? What about refresh rates?
What about rollback? What about bottlenecks? What about indexing? How long
will a query take? Do the forms and reports provide accurate values? Can
the data be presented graphically? Is there enough horsepower to drive the
application? Can you put 10 tons of mainframe data onto a 50-node LAN? What
about RAM on the clients? What about disk space on the server? The
questions are as numerous and different as each application.

This methodology is proving successful in many companies. A medical
company in Boulder, Colorado uses this methodology to generate and test
data for its medical information software package. A Dallas-based company
can now create realistic data for unit testing without depending on its
client base for assistance. Several San Francisco-based companies combine
existing data and newly generated data to test applications migrating to
client/server. In each case, the traditional methodologies of creating data
were replaced with the object-oriented data generation engine. An example
using this methodology follows.

Example

You need a file with 15 fields. The file is comprised of
variable-length records; each field must be separated by a comma. You need
200,000 of these records. You need fields with last name, first

name,
middle initial, gender, date of birth, Social Security number, phone
number, client number, beginning balance, date, time, account type, account
location, current balance and teller ID. The specification is shown in
Example 1. The output for this specification is shown in Example 2.

What would take days to code from scratch, including assembling all
the random values required for things such as names and addresses, takes
less than five minutes to accomplish with this methodology. If a change
needs to be made, it takes only a few keystrokes and the generation is
rerun.

Advantages

There are many advantages to using such an approach to application
development. In programming classes, students of any application language
can now produce realistic data files of significant size to experience the
problems faced in production environments. In the test and generation
process, users can save the specification and discard the test data after
it has been used. If the data needs to be used again, the specification can
be rerun. The randomness of the output can be controlled through the use of
seed values. A department can maintain a library of test specifications,
standardizing the testing data and making the data accessible to anyone
within the department. The generated data can be used to populate
production files in any application. Functional testing of modules can be
accomplished in the early phases, allowing for what/if analysis and
benchmarking of procedures. Unit testing can be accomplished without
dependencies among groups. Each group can create subsets of test data.
Testing can be done concurrently among development groups with common
agreement on data-fill types and the specification. User feedback can be
solicited for the design of screens, forms and reports without having to
wait for production data. Realistic prototyping using generated data can
highlight problem areas early on. Most important, stress testing,

modeling,
capacity planning and performance measurement can be performed using
realistic test data in the volumes that reflect the production environment.
    Considering a single developer or a major I/S shop with hundreds of
developers, this methodology can mean millions of dollars saved industrywide. The cost of generating test data is significant. Just take a
look at a few of the resources involved, including programmers' time,
machine resources, limitations using production data, limited testing staff
and different levels of programming skills. This does not include the costs
of correcting problems after the application has been migrated to production.
    Conclusion
    The object-oriented data generation approach has advantages for anyone
developing applications and programs. First, in being able to generate data
early in the design phase, the impacts from different data designs and

dictionaries can be measured. Second, the performance of the module can be
tested under stress loading. Third, by having actual data to test with,
valuable feedback can be collected from the user community, long before the
application reaches the production environment. Finally, data generation
and testing will not be left to the Quality Assurance and Testing group.
The object-oriented data generation methodology can be utilized by every
member of the development team throughout the life cycle of the project. It
is never too late for a better mousetrap.
    ABOUT THE AUTHOR
    Art Conroy is a senior developer and co-author of The Generator from
Mach One Software. He is also an adjunct professor of Computer Science at
the University of Colorado in Boulder. He has worked for Computer
Associates, Landmark Systems and several other software development
companies. Mach One Software, 6104 Calm Meadow Rd., Dallas, TX 75248, (800)
336-9969 or CompuServe 73704,2736.

Special Features: illustration; other
Descriptors: Technology Information; Object-Oriented Programming; Technology
Overview
File Segment: CD File 275

? Please enter a command or be logged off in 5 minutes
? Logoff

Estimated Cost Summary

Project		Client		Charge Code		Searcher		Job		Service Code	Use Num
										51	291
Date		Time		SessionID		Subsession		Subaccount			
03/12/2008		16:07:04		22		3					

Data Base	Dial Units	Access Charge	Print Credit	Types	Prints	Report	Rank	Links	CSS	Total
15	0.5360	2.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2
9	0.3760	2.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2
623	0.0560	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
810	0.2350	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
275	0.6110	3.41	0.00	3.79	0.00	0.00	0.00	0.00	0.00	7
624	0.2530	1.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1
Sub Totals	2.0670	$10.55	$0.00	$3.79	$0.00	$0.00	$0.00	$0.00	$0.00	$14
Session Totals	2.4290	$10.96		Telecom	$5.06					$19

Ended session: 3/12/2008 5:07:06 PM

?